



COAST TO CACTUS WEATHER EXAMINER



THE NATIONAL WEATHER SERVICE SPOTTER NEWSLETTER FOR
EXTREME SOUTHWESTERN CALIFORNIA

Spanish NOAA Weather Radio

On September 10, a dedication ceremony was held to introduce an all Spanish-language NOAA All-Hazards Weather Radio transmitter in the Coachella Valley.

The San Diego Weather Forecast Office also found a new advocate for this Spanish-language outreach. The office arranged with Univisión for Beatriz Moncayo to represent the NWS to the Hispanic community in southern California.

Moncayo currently works at KVYE-TV, a Univisión station in El Centro, CA. Prior to that, she was a

Weather Anchor at Univision's KORO-TV Corpus Christi, TX. Moncayo has also hosted Enfoque Musical, a music program seen on Spanish language TV across the country, and is also a former Miss Colombia.

Moncayo participated in the dedication ceremony. She is the first Spanish-language spokesperson for NOAA Weather Radio, and will record public service announcements in Spanish to air on Univisión stations across Southern California.

"I am pleased to be able to work with the Hispanic community to bring home the life-saving message of NOAA Weather Radio," Moncayo said. "The Spanish-language Weather Radio in the Coachella Valley will help bring critical warning messages directly and immediately to our community."

The sponsor of the NOAA Weather Radio station is the Coachella Valley Water District. The district has also donated \$5,000 for purchase of NOAA Weather Radios by the



Hispanic community. The population of the Coachella Valley is more than half Hispanic, and that percentage is much higher in the eastern parts of the valley. The radio signal can reach to Imperial Valley all the way to Mexicali, Mexico.

The dedication ceremony was attended by several representatives of local politicians, each presenting the Coachella Valley Water District and the NWS with certificates of recognition. At least four television stations (two Spanish-language) covered the event.

The news of this all-Spanish NOAA Weather Radio Transmitter reached all the way to the White House.

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The NWS San Diego recognizes Rod Heckel, Information Technology Officer at the NWS in El Paso, TX. Rod tirelessly created a program for automatic translation of NWS products ready for broadcast, and supported the nation's first all-Spanish NOAA Weather Radio transmitter in El Paso. He has been instrumental in passing along his work and assistance to the NWS San Diego in order to make the same happen in Southern California.

Service Assessment of Western Wildfires - Success between NWS and Partners

An assessment was released Sept. 29, 2004 of National Weather Service forecast services provided before, during and after the catastrophic wildfires that hit California last October and November. It showed successful coordination between several forecast offices of the NWS and emergency officials.

The wildfires that hit Southern California became one of the state's costliest natural disasters. The fourteen wildfires, driven by strong Santa Ana winds, consumed 3,600 homes and 740,000 acres of land early last fall. Twenty-two deaths were attributed to the blazes. After the fires, the bare ground was



prone to flooding and mudslides when heavy rain fell.

As this event unfolded, the NWS met the forecast challenges associated with the conditions leading to the onset of the fires, fire containment and the hydrological concerns in the aftermath.

"Due to the magnitude of this event, [the NWS] formed a service assessment team to examine the forecast and warning services provided to land managers, fire control personnel, emergency planners, media and public," said retired Air Force Brig. Gen. David L. Johnson, director of the NWS. "Service assessments provide a valuable contribution to ongoing efforts by the National Weather Service to improve the quality, timeliness and value of our products and services."

Assisting the efforts of land management agencies and fire control personnel were three fire-centered forecasting divisions of NOAA. Fire weather experts at the Storm Prediction Center in Norman, OK, issued national Fire Weather Outlook products highlighting areas most

vulnerable to new and continued wildfires.

Incident Meteorologists (IMETs) were stationed along the fires' front lines providing valuable on-site weather observations for fire crews on the ground. Weather Service Forecast Offices in San Diego and Los Angeles supported the IMETs and issued Fire Weather Watches, Red Flag Warnings and related high wind warnings. The combination of these NWS products and services resulted in excellent advance notification of a critical fire weather situation before the onset of the wildfire emergency and support for fire fighters and land management agencies during the event. Both the San Diego and Oxnard offices earned the Department of Commerce's Silver Medal Award for outstanding service.

The Santa Ana Winds

The fire season kicks into gear as offshore winds become the seasonal normal during the Fall and early Winter. These dry winds combine with very dry vegetation after a summer of nearly no rain. Here is a review of offshore winds in general, and Santa Ana winds in particular.

Santa Ana winds are strong, dry offshore winds that blow from the east or northeast. These winds are strongest below passes and canyons of the coastal ranges of Southern

California. The name is derived from the Santa Ana Canyon, which is susceptible to these winds.

The complex topography of Southern California combined with various atmospheric conditions create numerous scenarios that may cause widespread or isolated Santa Ana events. Santa Ana winds develop when a region of high pressure builds over the Great Basin (the plateau east of the Sierra Nevada and west of the Rocky Mountains including Nevada and western Utah). Air moves from high pressure to low pressure; in this case, from the Great Basin to the coast. This pressure pattern often follows the passage of an upper low through the interior west. If the upper low moves into northern Mexico or Arizona, the upper level winds will be from northeast, and enhance the northeast surface flow. The cold air associated with the upper low forms a dry front coming from the northeast. Strong subsidence associated with the cold air following these fronts forces strong winds aloft downward to the surface. This creates a turbulent mountain wave that touches the surface on the lee side of the mountains. On rare occasions, there may be precipitation with the system and a "wet Santa Ana" results,

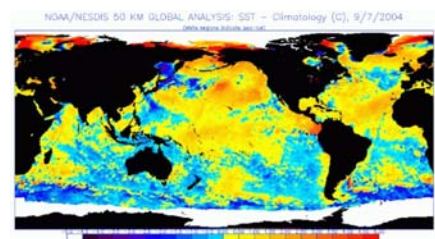
but most of the time a Santa Ana event brings clear skies and warm weather. Clockwise circulation around this high pressure area and subsidence (sinking motion) forces air down the mountain slopes from the higher plateau. The air warms and dries out, due to heating by compression, and accelerates as it descends toward the coast. Sometimes the winds are very localized, narrow corridors or rivers of wind, and nearby areas escape them. Santa Ana winds occur mainly during Fall and Winter and are most common during December. Summer events are rare. A reasonably strong event can produce sustained wind speeds of 30 to 40 mph with gusts over 60 mph. During exceptional events the top gusts can exceed 100 mph.

The strongest winds usually occur during the night and morning due to the absence of a competing sea breeze. The impacts of these winds are numerous. There is always a high fire danger during these events. Trees and power lines are toppled, leading to property damage and power outages. High profile vehicles are at risk of being blown over. Turbulence and low level wind shear adversely affect aircraft, while strong winds and associated waves can present great danger to boaters.

Fall events can bring hot weather as well as strong winds. Most high temperature records in coastal California have occurred during a hot Santa Ana. Legend and lore have sprung from these uncomfortable conditions. Early Mexican residents called them "los vaunts del dabble" - the devil winds. It is a strange time for residents near the coast because their mild climate turns into the Sahara for a time. Fires increase, crime seems to go up, and numerous health conditions worsen, such as allergies. Some claim earthquakes are more likely during this "earthquake weather." Like the time during a full moon, it just seems that more weird things happen.

El Niño is Back

NOAA declared that El Niño is back, but this time around in a weaker state. "El Niño conditions have developed in the tropical Pacific and are expected to last through early 2005," said Jim Laver, director of the NOAA Climate Prediction Center. "At this time it is not clear what, if any, impacts this event will have on ocean



temperatures in the classical El Niño region along the west coast of South America and on temperature and precipitation in the United States."

Sea surface temperatures (SSTs) were more than 0.5 degrees C above average in the central and western equatorial Pacific during August 2004.

"The increase and eastward expansion of warmth in the central equatorial Pacific during July through August indicate the early stages of a warm (El Niño) episode," said Vernon Kousky, NOAA's lead ENSO forecaster. He added, "Through the end of August conditions were not yet indicative of a basin-wide El Niño, particularly due to the presence of below normal sea-surface temperatures in the far eastern equatorial Pacific near the South American coast." The lack of basin-wide warming indicates that this El Niño is likely to be much weaker than the 1997-1998 event.

El Niño is associated with changes in sea surface temperatures in the tropical Pacific Ocean and can have significant impacts on weather around the world. El Niño episodes occur about every four to five years and can last up to 12 to 18 months.

Strong El Niños predict a high likelihood of above normal rainfall in Southern

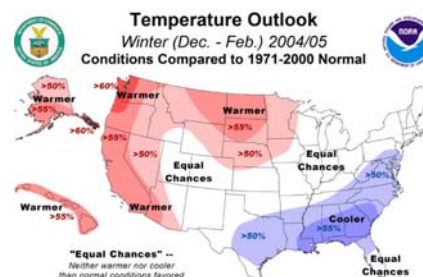
California, but weak El Niños predict neither above normal nor below normal rainfall. In the past, just as many wet years as dry years have occurred during a weak El Niño.

So don't start filling those sandbags yet! The best forecast for the upcoming Southern California rainfall season by the NWS San Diego is about normal precipitation.

For more information about El Niño's impact on California rainfall, visit: ggweather.com/enso/calenso.htm

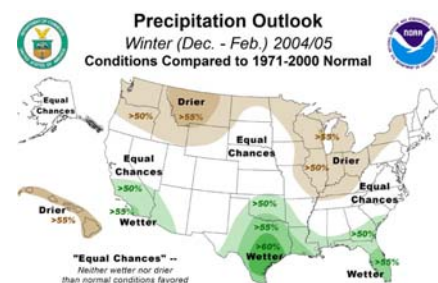
Winter Outlook

The Climate Prediction Center's 2004-2005 Winter Outlook calls for above-average temperatures in Alaska, much of the West and the northern and central Great Plains. Below average temperatures are expected across the Gulf Coast states, the Southeast and the mid-Atlantic region of the U.S. There are equal chances of warmer, cooler or near-normal temperatures this winter in the Northeast, Midwest and parts of Southwest.



The precipitation outlook calls for wetter-than-average conditions in parts of California, the extreme Southwest and across the Southern U.S.—from Texas to Florida.

Drier-than-average conditions are expected in the Midwest, northern Plains and Pacific Northwest.



The winter outlook indicates some improvement in drought conditions in the West, but long-term drought is expected to persist through the winter in many areas.

Dry Streak Record

Even with talk of El Niño, San Diego's Lindbergh Field has met the record for the number of 181 consecutive days with no measurable precipitation as of Oct. 15th.

In 1915, Lindbergh went 164 days without measurable precipitation. This streak stood for 73 years until, in 1988, it was broken by only one day (165 days). (Note: This streak was tied twice after being set in 1915). The long standing nature of the streak combined with the fact that it was only broken 73

years later by one day should stand as a testament to how difficult it is to break the streak of 164 days. We assume that bar is set quite high. So then it's safe to put away the record books for awhile right?

Only 15 years later in 2003, not only did we break that record, we shattered it by 16 days! That record stands at 181 consecutive days without measurable precipitation. But again, just when you thought it was safe to put this record back on the shelves for the next few decades, we find ourselves in the position to break this record yet again, only one year later! So a record that stood for 73 years, has now been broken 3 times in the last 16 years. More impressive is that both last year and this year surpassed the old bench mark in style, making a mockery of the 164 and 165 day streaks.

A new record will be set if if no measurable rain falls through Oct 16. A chance of rain is in the forecast for early Sunday; if it rains before midnight Saturday night, the record will only be tied!

Quarterly Summary

July

A typical early summer weather pattern dominated early July across southwest California with considerable night and morning clouds west of the mountains, and normal temperatures. By mid-month a large upper-level high began to dominate the Southwest. The high was positioned far enough north to begin a weak monsoon flow with occasional clouds and afternoon thunderstorms on several days. During this period, daytime maximum temperatures warmed considerably, with 80s at the coast on several days. The large upper high shifted west during the last week of the month, allowing some cooling near the coast, and pushed most of the monsoon flow off to the east. Temperatures averaged near normal for the month.

A deep marine layer produced areas of light precipitation west of the mountains on the 8th, and scattered thunderstorms developed on the 14th, and again in San Diego County on the 24th through the 26th. Isolated flash flooding was reported on the Indian Springs Campground, 4 miles north of Warner Springs, and in the Cedar Fire burn area of San Diego County southeast of Lake Camacho on the 14th. One thunderstorm produced a mud and rock slide in the fresh

Mahagua Fire burn area near Warner Springs on the 25th, stranding a vehicle and blocking Highway S2 for a time.

San Diego - Lindbergh Field Data

	Max	Min	Avg	Rain
JUL	76.5	68	72.1	0
Norm	75.8	66	70.9	0
An-may	0.7	1.7	1.2	0
% of norm				0%
Max	85	72		0
Min	73	65		

August

After a quiet start, the summer monsoon kicked in around the middle of the month with several days of thunderstorms. Local flash flooding and even a couple of tornadoes were reported from the high deserts, south and east through the Coachella Valley, and the San Diego County mountains and deserts. Drier west flow dominated for the remainder of the month. Temperatures averaged from around one, to as much as three degrees below normal.

Monsoon flow developed during the second week of the month, with thunderstorms noted from the 11th through the 17th. Numerous Flash Flood Warnings were issued, but the most severe flooding was recorded in the Victor Valley and Apple Valley areas on the 14th where rapidly rising water

inundated roads, homes, and businesses. Other strong thunderstorms developed over the San Diego County deserts on the 15th through the 17th. Doppler radar indicated large hail and heavy rain with these storms, however, since they occurred over mostly remote, uninhabited areas, no ground reports were received regarding their intensity. Even though local areas received very heavy rains with the monsoon, only the highest mountain peaks reported precipitation that was near or above normal. Most areas of the region did not have measurable rainfall, particularly west of the mountains.

August 13-14: A weak upper trough, which originated as an easterly wave from the Gulf of Mexico, moved north from the west coast of Mexico, and into the region on the 13th. Thunderstorms erupted before dawn over portions of San Diego County and moved north into the Inland Empire. With abundant moisture available, and considerable instability, the showers and thunderstorms continued throughout the day. There was a brief respite overnight, and then more storms fired up early on the 14th and continued through the evening. By the 15th and 16th, westerly flow had begun to dry the atmosphere and only isolated thunderstorms were observed, mostly in the deserts. Numerous Flash Flood

Warnings and Flood Advisories were issued during this period. Two tornadoes were reported in the high deserts where dew points reached the 70s. Radar estimates indicate from 2 to 3 inches of rain fell in the Victorville area just after noon on the 14th where severe flooding was reported. Water ran as high as 4 to 5 feet, stranding cars and people. One injury was reported. Heavy rains in San Diego County also left mud and debris on roadways in the eastern sections.

San Diego - Lindbergh Field Data

	Max	Min	Avg	Rain
AUG	74.8	67	70.8	0
Norm	77.5	67	72.5	0.1
An- may	-2.7	-1	-1.7	0
% of norm				0%
Max	79	69		0
Min	70	63		

September

September got off to a warm and humid start under high pressure aloft, and with relatively warm sea surface temperatures at the coast. Monsoon flow gradually developed and resulted in several days of mountain and desert thunderstorms. A low pressure trough sweeping through from the northwest cleared out the moisture by the 12th and set the stage for moderate offshore flow and hot

weather during the third week. A weak trough aloft, and northwest flow brought a cool end to the month. Temperatures averaged from one to three degrees above normal along the coast, to near normal inland.

The tail end of the traditional Summer Monsoon was rather limited this month with only a few spots reporting heavy rainfall. Almost all of the significant rain fell between the 8th and the 11th of the month. Excluding those spots that were affected by thunderstorms, rainfall over the region for the month was well below average. For the Summer as well, only select mountain and desert areas received rainfall above 50% of normal, while coastal and valley areas were consistently dry.

September 9-11: A moist southerly flow and considerable instability produced showers and thunderstorms, mostly in the mountains and deserts. One of the hardest hit areas was near Borrego Springs. Thunderstorms in the mountains west of town on the 10th generated an estimated 15 to 20 ft. wall of debris and water from a possible debris dam break high up in the canyon. The resulting flow moved down Borrego Palm Canyon Creek, destroying a USGS gaging station, shearing off a grove of 100 year old palm trees at their base, inundating a campground, and damaging scores of homes with water up to

3 feet deep. Then, on the 11th a severe thunderstorm battered the desert community with hail up to one inch in diameter and 60 mph winds. Farther north, on the north slope of the San Bernardino Mountains, a nearly stationary storm dumped an estimated 4 to 8 inches of rain locally over seven hours, completely washing out highway 247 at Pony Road with waves of water that damaged several homes in Johnson Valley.

San Diego - Lindbergh Field Data

	Max	Min	Avg	Rain
SEP	78.1	67	72.6	T
Norm	77	66	71.6	0.21
An-may	1.1	1	1	-0.2
% of norm				0%
Max	96	73		T
Min	70	61		

Spotter News

21 new spotters have signed up since early July bringing the total number of spotters to nearly 800!

Faithful spotter Carole Donahue moved from Forest Falls to Redlands in August. She will be recognized by the NWS for her service. Her friend Evelyn Gillmore of Forest Falls has accepted to have weather equipment installed at her key location to help the NWS stay aware of the

local conditions in that volatile and remote place.

The good folks at The Elkhorn General Store in Forest Falls have expressed their willingness to be unofficial spotters on call whenever we need someone to tell us what's going on there.

Borrego Springs got a wake up call when strong thunderstorms hit the region on the 10th and 11th of September. New spotters have joined from there since then, and some have provided pictures. If you have digital pictures that clearly document a weather event worthy of a spotter report, the NWS would love to have a copy. If you are comfortable with that, please email them to me at miguel.miller@noaa.gov. They will be used for internal purposes only.

I will try to be in contact more often with spotters in the future. Some spotters feel left out and others have even forgotten they are spotters. I hope to maintain better contact with new email listings and at least make seasonal email contact. When an expected weather event approaches, such as a storm, I will try to inform spotters to be ready and looking for specific things.

Spotter training will be taken on the road again soon. We will hold spotter training in Rialto on Oct. 30th at 9 am. Another spotter training presentation will be in Victorville in the near future.

Important Note: Our web page has changed addresses. Please go to our new home page at: weather.gov/sandiego, navigate to your favorite sites and re-save your bookmarks. Also, please take a few moments to familiarize yourself with the new look and features of the new page.

Skywarn News

The 2004 Skywarn Recognition Day will take place on December 4, 2004 from 00:00 - 24:00 UTC. The radio station at the NWS San Diego office will take part in this event once again. All Skywarn members who are interested in participating are welcome to stop by and operate the WX6SGX radio station. Additionally, those who are curious about amateur radio but are not currently licensed are welcome to operate the station as well! We will be attempting to make contact with as many other NWS offices as possible, as well as contacts with other amateur radio operators around the world. It is a great chance to test equipment, get together for some fun, and learn about radio and its importance to Skywarn.

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Coast to Cactus can always be found
by clicking on spotter and skywarn
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